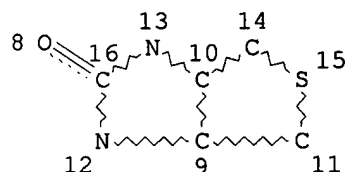


=&gt; d que

L7 17316 SEA FILE=HCAPLUS ABB=ON PLU=ON POLYELECTROLYTES+NT,RTCS/CT  
 L11 STR



*Considered.*  
*10/29/02*

NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE  
 L15 5222 SEA FILE=REGISTRY SSS FUL L11  
 L20 39 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 AND L15  
 L22 9673 SEA FILE=HCAPLUS ABB=ON PLU=ON BIOSENSORS+NT/CT  
 L24 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L22 AND L20

=&gt; d ibib abs hitstr hitind 124 1-7

L24 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2001:410413 HCAPLUS  
 DOCUMENT NUMBER: 135:16333  
 TITLE: Self-assembled metal colloid monolayers having size and density gradients  
 INVENTOR(S): Natan, Michael J.; Baker, Bonnie E.  
 PATENT ASSIGNEE(S): The Penn State Research Foundation, USA  
 SOURCE: U.S., 78 pp., Cont.-in-part of U.S. Ser. No. 769.970, abandoned.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6242264	B1	20010605	US 2000-254142	20000112
WO 9810289	A1	19980312	WO 1997-US15581	19970904

W: CA, JP, KR, US  
 RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

PRIORITY APPLN. INFO.:  
 US 1996-25064P P 19960904  
 US 1996-769970 B2 19961219  
 WO 1997-US15581 W 19970904

AB Metal colloid monolayers comprising a plurality of colloidal Ag-clad Au nanoparticles surface confined on a substrate are described which have a gradient of nanoparticle d. in a first direction, and a gradient in particle size in a second direction perpendicular to the first direction.

The gradients may be formed by coating a substrate with a bifunctional org. film; immersing the coated substrate into a colloidal Au soln. so that a first leading edge of the substrate is immersed in the colloidal Au soln. for a longer period of time relative to a first trailing edge to provide a monolayer of Au nanoparticles having a decreasing level of coverage from the first leading edge to the first trailing edge; withdrawing the substrate from the colloidal Au soln.; rotating the substrate through an angle of about 90.degree.; immersing the substrate provided with the monolayer of Au nanoparticles in an Ag+ soln. so that a second leading edge of the substrate is immersed in the Ag+ soln. for a longer period of time relative to a second trailing edge to provide a monolayer of Au nanoparticles having a decreasing level of Ag cladding thickness from the second leading edge to the second trailing edge; and withdrawing the substrate from the Ag+ soln. Methods of detg. optimal surface characteristics of a metal colloid monolayer comprising a plurality of colloidal Ag-clad Au nanoparticles surface confined on a substrate for use in an anal. procedure are described which entail using the gradated monolayer for an anal. procedure; and analyzing the results achieved at different regions of the gradated monolayer to det. a nanoparticle coverage and particle size that provides an optimal result. The monolayer may be a surface-enhanced Raman scattering response substrate or a biosensor for detecting the presence of a biol. ligand.

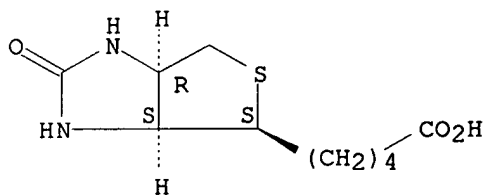
IT 58-85-5, Biotin 102849-12-7, 3-(N-Maleimidopropionyl)biocytin  
 RL: ARU (Analytical role, unclassified); DEV (Device component use); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process); USES (Uses)

(self-assembled silver-clad gold colloid monolayers having size and d. gradients and their use in anal.)

RN 58-85-5 HCAPLUS

CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

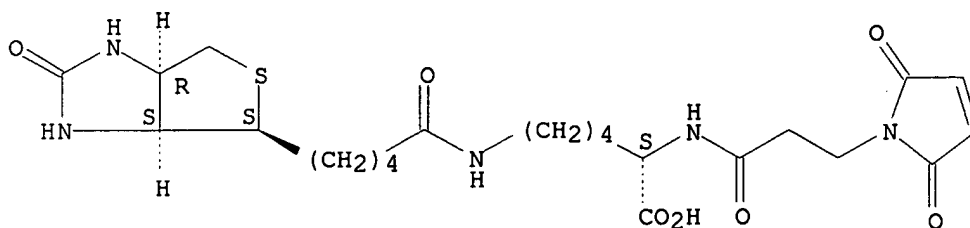
Absolute stereochemistry. Rotation (+).



RN 102849-12-7 HCAPLUS

CN L-Lysine, N2-[3-(2,5-dihydro-2,5-dioxo-1H-pyrrol-1-yl)-1-oxopropyl]-N6-[5-[(3aS,4S,6aR)-hexahydro-2-oxo-1H-thieno[3,4-d]imidazol-4-yl]-1-oxopentyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

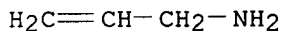


IT **71550-12-4, Poly(allylamine)hydrochloride**  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
 (self-assembled silver-clad gold colloid monolayers having size and d. gradients and their use in anal.)  
 RN 71550-12-4 HCAPLUS  
 CN 2-Propen-1-amine, hydrochloride, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 10017-11-5

CMF C3 H7 N . Cl H



● HCl

IC ICM G01N021-65  
 ICS G01N033-48; G01N033-50; G01N033-553  
 NCL 436171000  
 CC 9-1 (Biochemical Methods)  
 Section cross-reference(s): 66, 73, 79, 80  
 IT **Biosensors**  
 Colloids  
 Monolayers  
 Nanoparticles  
 SERS (Raman scattering)  
 Self-assembly  
 (self-assembled silver-clad gold colloid monolayers having size and d. gradients and their use in anal.)  
 IT **58-85-5, Biotin** 9013-20-1, Streptavidin **102849-12-7**,  
 3-(N-Maleimidopropionyl)biocytin  
 RL: ARU (Analytical role, unclassified); DEV (Device component use); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process); USES (Uses)  
 (self-assembled silver-clad gold colloid monolayers having size and d. gradients and their use in anal.)  
 IT 60-23-1, Mercaptoethylamine 60-24-2, 2-Mercaptoethanol 1067-47-6,  
 3-Cyanopropyltriethoxysilane 1344-28-1, Alumina, uses 4420-74-0,  
 3-Mercaptopropyltrimethoxysilane 7440-22-4, Silver, uses 7440-57-5,  
 Gold, uses 7631-86-9, silica, uses 12142-45-9, Potassium niobate  
 (K<sub>4</sub>Nb<sub>6</sub>O<sub>17</sub>) 13822-56-5, 3-Aminopropyltrimethoxysilane 14808-60-7,  
 Quartz, uses 18282-10-5, Tin dioxide 18586-39-5, 2-

(Diphenylphosphino)ethyltriethoxysilane 27326-65-4, 2-  
(Trimethoxysilyl)ethyl-2-pyridine 30382-71-9 31001-77-1,  
3-Mercaptopropylmethyldimethoxysilane 71550-12-4,  
Poly(allylamine)hydrochloride 143203-47-8, (3-  
Cyanopropyl)dimethylmethoxysilane  
RL: DEV (Device component use); PEP (Physical, engineering or chemical  
process); PROC (Process); USES (Uses)  
(self-assembled silver-clad gold colloid monolayers having size and d.  
gradients and their use in anal.)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:238455 HCAPLUS

DOCUMENT NUMBER: 135:46742

TITLE: Superquenching and Its Applications in J-Aggregated  
Cyanine Polymers

AUTHOR(S): Jones, Robert M.; Bergstedt, Troy S.; Buscher, C.  
Thomas; McBranch, Duncan; Whitten, David

CORPORATE SOURCE: QTL Biosystems LLC, Santa Fe, NM, 87501, USA

SOURCE: Langmuir (2001), 17(9), 2568-2571

CODEN: LANGD5; ISSN: 0743-7463

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A fluorescence superquenching process was obsd. in water-sol.  
poly-L-lysine derivs. contg. an appended cationic cyanine dye on each  
repeat unit. The formally nonconjugated cyanine dye chromophores strongly  
assoc. in a J aggregate structure characterized by a sharp red-shifted  
absorption (compared to the monomer) and a similarly sharp red-shifted  
fluorescence. Superquenching is manifested by large Stern-Volmer consts.  
for fluorescence quenching by oppositely charged electron acceptors or  
energy transfer dyes; substantial quenching is obsd. at levels of quencher  
corresponding to one to four mols. per polymer chain. The quenching obsd.  
for these polymers is equiv. or greater to that previously obsd. for  
conjugated polyelectrolytes. The superquenching of the J aggregate  
polymer fluorescence can be used applied in sensors for competitive  
bioassays.

IT 344554-42-3

RL: NUU (Other use, unclassified); USES (Uses)

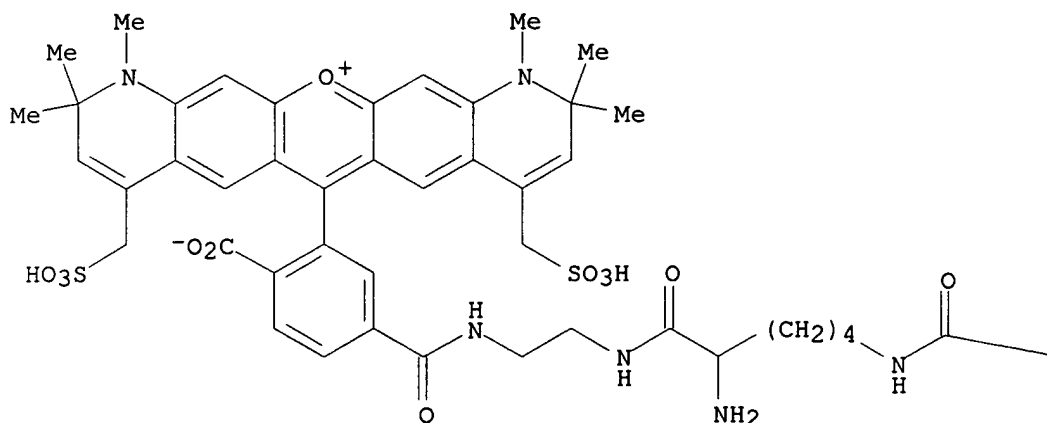
(QTL conjugate quencher; fluorescence superquenching in J-aggregated  
cyanine-functionalized poly-L-lysine for use in selective biosensors)

RN 344554-42-3 HCAPLUS

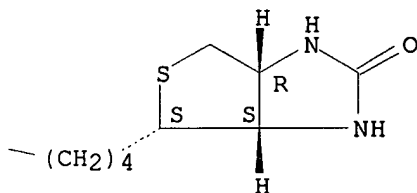
CN Pyrano[3,2-g:5,6-g']diquinolin-13-ium, 6-[5-[[[2-[[2-amino-6-[[5-  
[(3aS,4S,6aR)-hexahydro-2-oxo-1H-thieno[3,4-d]imidazol-4-yl]-1-  
oxopentyl]amino]-1-oxohexyl]amino]ethyl]amino]carbonyl]-2-carboxyphenyl]-  
1,2,10,11-tetrahydro-1,2,2,10,10,11-hexamethyl-4,8-bis(sulfomethyl)-,  
inner salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



IT 344554-43-4

RL: NUU (Other use, unclassified); USES (Uses)

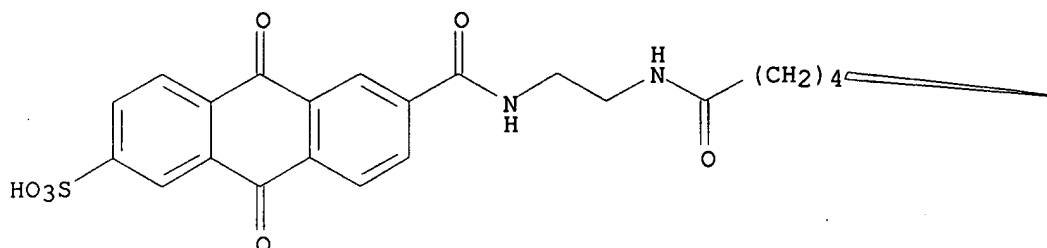
(anthraquinone biotin QTL, quencher; fluorescence superquenching in J-aggregated cyanine-functionalized poly-L-lysine for use in selective biosensors)

RN 344554-43-4 HCAPLUS

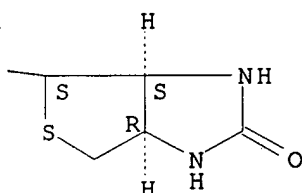
CN 2-Anthracenesulfonic acid, 6-[[[2-[[5-[(3aS,4S,6aR)-hexahydro-2-oxo-1H-thieno[3,4-d]imidazol-4-yl]-1-oxopentyl]amino]ethyl]amino]carbonyl]-9,10-dihydro-9,10-dioxo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



- CC 36-5 (Physical Properties of Synthetic High Polymers)  
Section cross-reference(s): 9, 73
- IT **Polyelectrolytes**  
(cationic; fluorescence superquenching in J-aggregated cyanine-functionalized poly-L-lysine for use in selective biosensors)
- IT **Biosensors**  
Electron acceptors  
Fluorescence quenching  
J-aggregates  
Optical absorption  
Photoinduced energy transfer  
(fluorescence superquenching in J-aggregated cyanine-functionalized poly-L-lysine for use in selective biosensors)
- IT **344554-42-3**  
RL: NUU (Other use, unclassified); USES (Uses)  
(QTL conjugate quencher; fluorescence superquenching in J-aggregated cyanine-functionalized poly-L-lysine for use in selective biosensors)
- IT **344554-43-4**  
RL: NUU (Other use, unclassified); USES (Uses)  
(anthraquinone biotin QTL, quencher; fluorescence superquenching in J-aggregated cyanine-functionalized poly-L-lysine for use in selective biosensors)
- REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:790686 HCAPLUS

DOCUMENT NUMBER: 133:331759

TITLE:

Method for detecting biological agents

INVENTOR(S):

Chen, Liao-hai; Mcbranch, Duncan W.; Wang, Hsing-Lin; Whitten, David G.

PATENT ASSIGNEE(S):

The Regents of the University of California, USA

SOURCE:

PCT Int. Appl., 38 pp.

DOCUMENT TYPE: CODEN: PIXXD2  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: 1 English  
 PATENT INFORMATION:

*cha*

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
<u>WO 2000066790</u>	A1	20001109	WO 2000-US12423	20000504
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG EP 1097242 A1 20010509 EP 2000-928892 20000504 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

PRIORITY APPLN. INFO.: US 1999-132556P P 19990505  
 WO 2000-US12423 W 20000504

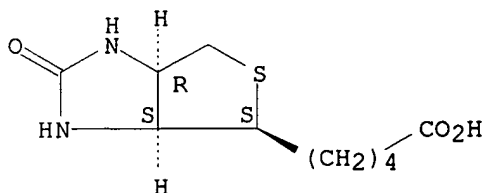
AB A sensor is provided including a polymer capable of having an alterable measurable property from the group of luminescence and elec. cond., the polymer having an intermediate combination of a recognition element, a tethering element and a property-altering element bound thereto and capable of altering the measurable property, the intermediate combination adapted for subsequent sepn. from the polymer upon exposure to an agent having an affinity for binding to the recognition element whereupon the sepn. of the intermediate combination from the polymer results in a detectable change in the alterable measurable property, and, a means of detecting said detectable change in the alterable measurable property.

IT 58-85-5, Biotin  
 RL: DEV (Device component use); USES (Uses)  
 (method for detecting biol. agents)

RN 58-85-5 HCAPLUS

CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IC ICM C12Q001-68  
 ICS C12Q001-70; G01N021-64; G01N033-00; G01N033-53; G01N033-531; G01N033-533; G01N033-543; C07H021-02; C07H021-04; C12N015-00; B05D001-18; B01J013-00  
 CC 9-1 (Biochemical Methods)  
 IT Affinity

Bacteria (Eubacteria)

**Biosensors**

Cell

Dissolution

Electric conductivity

Energy transfer

Fluorescence

Fluorescent dyes

Fluorometry

Luminescence

Luminescence spectroscopy

Microorganism

Optical fibers

**Polyelectrolytes**

Sensors

Separation

Solutions

Test kits

Virus

(method for detecting biol. agents)

IT 58-85-5, Biotin 71-00-1D, Histidine, copper complex 1910-42-5, Methyl viologen 7440-50-8D, Copper, histidine complex, uses 9033-83-4, Polyphenylene 9055-67-8D, Poly(ADP-ribose) polymerase, DNA-binding domain 25067-54-3, Polyfuran 25067-54-3D, Polyfuran, derivs. 25067-58-7, Polyacetylene 25067-59-8, Polyvinyl carbazole 25067-59-8D, Polyvinyl carbazole, derivs. 25233-30-1, Polyaniline 25233-30-1D, Polyaniline, derivs. 25233-34-5, Polythiophene 26009-24-5, Poly(p-phenylene vinylene) 30604-81-0, Polypyrrole 30604-81-0D, Polypyrrole, derivs. 37758-47-7, Ganglioside GM1 78675-98-6, Squaraine 96638-49-2, Poly(phenylene vinylene) 96638-49-2D, Poly(phenylene vinylene), derivs. 103419-76-7, Poly(1,4-naphthalenediyl-1,2-ethenediyl) 125714-86-5 164658-06-4, Poly(2,5-pyridinediyl-1,2-ethenediyl) 189145-97-9, Poly(pyridinediyl-1,2-ethenediyl)

RL: DEV (Device component use); USES (Uses)

(method for detecting biol. agents)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:171579 HCAPLUS

DOCUMENT NUMBER: 130:349166

TITLE: A new self-assembled modified electrode for competitive immunoassay

AUTHOR(S): Danilowicz, C.; Manrique, J. M.

CORPORATE SOURCE: Departamento de Quimica Analitica y Fisicoquimica, Facultad de Farmacia y Bioquimica, Buenos Aires, AR-1113, Argent.

SOURCE: Electrochemistry Communications (1999), 1(1), 22-25  
CODEN: ECCMF9; ISSN: 1388-2481

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

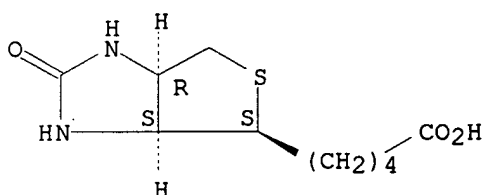
AB Alternating films constructed upon successive deposition of redox polymer Os(bpy)2ClPyCH2NHpoly(allylamine) and antibiotin IgG were developed for amperometric immunosensor design. Cyclic voltammetric measurements were used to verify charge transport between redox sites and the redox surface concn. was estd. upon voltammetric peak integration. Biotin-antibiotin



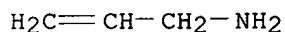
complex formation was evaluated using horseradish peroxidase as an enzyme label. Redox mediation between the modified electrode surface and the redox site in the enzyme was verified after substrate addn. Multilayer modified gold electrodes with biol. active antibiotin IgG mols. were employed for the development of a competitive immunoassay with electrochem. label detection.

IT 58-85-5, Biotin  
 RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)  
 (a new self-assembled modified electrode for competitive immunoassay)  
 RN 58-85-5 HCAPLUS  
 CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-,  
 (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT 71550-12-4D, reaction products with osmiumbipyridinechloropyridinaldehyde  
 RL: DEV (Device component use); USES (Uses)  
 (a new self-assembled modified electrode for competitive immunoassay)  
 RN 71550-12-4 HCAPLUS  
 CN 2-Propen-1-amine, hydrochloride, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 10017-11-5  
 CMF C3 H7 N . Cl H



● HCl

CC 9-1 (Biochemical Methods)  
 IT Biosensors  
 (immunosensors; a new self-assembled modified electrode for competitive immunoassay)  
 IT 58-85-5, Biotin  
 RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)  
 (a new self-assembled modified electrode for competitive immunoassay)  
 IT 7440-57-5, Gold, uses 71550-12-4D, reaction products with osmiumbipyridinechloropyridinaldehyde  
 RL: DEV (Device component use); USES (Uses)  
 (a new self-assembled modified electrode for competitive immunoassay)  
 REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:176094 HCAPLUS

DOCUMENT NUMBER: 128:190151

TITLE: Self-assembled metal colloid monolayers

INVENTOR(S): Natan, Michael J.; Baker, Bonnie E.

PATENT ASSIGNEE(S): Penn State Research Foundation, USA; Natan, Michael J.; Baker, Bonnie E.

SOURCE: PCT Int. Appl., 141 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9810289	A1	19980312	WO 1997-US15581	19970904
W: CA, JP, KR, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6242264	B1	20010605	US 2000-254142	20000112
PRIORITY APPLN. INFO.:				
			US 1996-25064P	P 19960904
			US 1996-769970	A 19961219
			WO 1997-US15581	W 19970904

AB A biosensor based on complexes between biomol. receptors and colloidal Au nanoparticles, and more specifically, colloid layers of receptor/Au complexes that can be used to detect biomol. analytes through measuring of binding-induced changes in elec. resistance or surface plasmon resonance. Also disclosed is a method for detecting and analyzing carrier-borne chem. compds. with Raman spectroscopy using an improved SERS substrate. Further disclosed is an improved method for detecting compds. in solvents using capillary electrophoresis in conjunction with Raman spectroscopy.

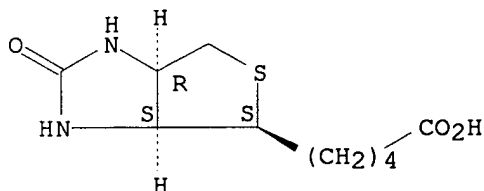
IT 58-85-5, Biotin 71550-12-4, Poly(allylamine)hydrochloride

RL: DEV (Device component use); USES (Uses)  
(self-assembled metal colloid monolayers)

RN 58-85-5 HCAPLUS

CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-,  
(3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



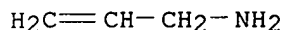
RN 71550-12-4 HCAPLUS

CN 2-Propen-1-amine, hydrochloride, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 10017-11-5

CMF C3 H7 N . Cl H



● HCl

IC ICM G01N033-553  
 CC 9-1 (Biochemical Methods)  
 Section cross-reference(s): 59, 79, 80  
 IT Air  
 Biochemical molecules  
   **Biosensors**  
   Capillary electrophoresis  
   Colloids  
   Electric resistance  
   Monolayers  
   Nanoparticles  
   Pesticides  
   Raman spectroscopy  
   SERS (Raman scattering)  
   Self-assembly  
   Solvents  
   Surface plasmon  
     (self-assembled metal colloid monolayers)  
 IT **58-85-5**, Biotin 1332-29-2, Tin oxide 1344-28-1, Alumina, uses  
 7440-22-4, Silver, uses 7440-57-5, Gold, uses 9013-20-1, Streptavidin  
 14808-60-7, Quartz, uses **71550-12-4**,  
 Poly(allylamine)hydrochloride  
 RL: DEV (Device component use); USES (Uses)  
     (self-assembled metal colloid monolayers)

L24 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1997:181195 HCAPLUS  
 DOCUMENT NUMBER: 126:168793  
 TITLE: Optical solid-phase biosensor based on streptavidin and biotin  
 INVENTOR(S): Diederich, Anke; Loesche, Matthias; Voelker, Michael;  
 Siegmund, Hans-Ulrich; Heiliger, Ludger  
 PATENT ASSIGNEE(S): Bayer A.-G., Germany  
 SOURCE: Ger. Offen., 12 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19530078	A1	19970220	DE 1995-19530078	19950816
EP 762122	A1	19970312	EP 1996-112608	19960805
R: BE, DE, FR, GB, IT, LU, NL, SE				
CA 2183204	AA	19970217	CA 1996-2183204	19960813
JP 09054094	A2	19970225	JP 1996-229454	19960813

## PRIORITY APPLN. INFO.:

DE 1995-19530078

19950816

AB A novel optical solid-phase biosensor, which can be in the form of test strips and which uses biomols. as receptors for the specific detection of analytes as well as Foerster energy transfer between a donor fluorescent dye F1 and an acceptor fluorescent dye F2 as the detection means, is disclosed. The device consists of: (1) a transparent support; (2) an overlaying multilayer of polyanions and polycations that contains as its ~~topmost layer a biotinylated polycation, e.g., polylysine hydrobromide;~~ (3) a covering for the topmost biotinylated cationic layer that contains streptavidin which can bind to the biotinylated layer; and (4) addnl. biotinylated biomols. as receptors, e.g., antibodies, that can bind to a fluorescent dye F2-labeled analyte, and wherein the fluorescent dye F1 can be bound to the polyionic layers, to the streptavidin, or to other antibody-binding biomols., or to the antibodies. An example is given of the detn. of IgG using a test strip according to the invention.

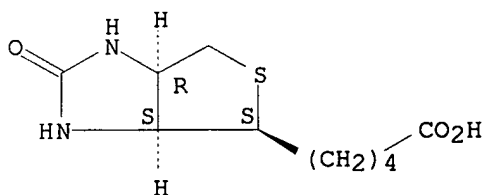
IT 58-85-5, Biotin

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(optical solid-phase biosensor based on streptavidin/biotin with Foerster energy transfer for detection)

RN 58-85-5 HCAPLUS

CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-,  
(3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IC ICM G01N033-533

CC 9-1 (Biochemical Methods)

Section cross-reference(s): 15, 73

IT **Polyelectrolytes**

(anionic; optical solid-phase biosensor based on streptavidin/biotin with Foerster energy transfer for detection)

IT **Polyelectrolytes**

(cationic; optical solid-phase biosensor based on streptavidin/biotin with Foerster energy transfer for detection)

IT **Biosensors**

(immunosensors; optical solid-phase biosensor based on streptavidin/biotin with Foerster energy transfer for detection)

IT **Biosensors****Biosensors**

(optical; optical solid-phase biosensor based on streptavidin/biotin with Foerster energy transfer for detection)

IT 58-85-5, Biotin 9013-20-1, Streptavidin 27072-45-3, FITC

36877-69-7, Rhodamine B isothiocyanate

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(optical solid-phase biosensor based on streptavidin/biotin with Foerster energy transfer for detection)

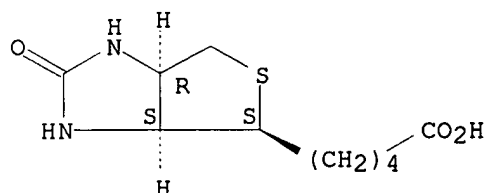
L24 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:328889 HCAPLUS  
 DOCUMENT NUMBER: 122:100717  
 TITLE: New nanocomposite films for biosensors: layer-by-layer adsorbed films of polyelectrolytes, proteins or DNA  
 AUTHOR(S): Decher, Gero; Lehr, Birgit; Lowack, Klaus; Lvov, Yuri; Schmitt, Johannes  
 CORPORATE SOURCE: Inst. fur Physikalische Chemie, Johannes Gutenberg-Universitat, Mainz, D-55099, Germany  
 SOURCE: Biosensors & Bioelectronics (1994), 9(9/10), 677-84  
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 LANGUAGE: English

AB This report describes the construction of ultrathin multicomponent films with an internal structure on the nanometre scale. In the simplest case, the films are built-up by the subsequent adsorption of polyanions and polycations. They can be fabricated on inorg. substrates such as glass, quartz or silicon wafers, or on various org. materials. The polymeric interlayers can incorporate materials with desired elec. optical properties. The av. thickness of the layers can be fine-tuned with Angstrom precision by the addn. of suitable salts. They are temp. stable up to at least 200.degree.C and can be laterally structured using conventional photolithog. techniques. The films provide for a well-defined substrate-independent interface for the immobilization of biol. macromols., such as proteins or DNA, in their active state. The immobilization of streptavidin enables the controlled attachment of any biotinylated mol. with no resulting loss in its biol. activity. Area-selective immobilization provides the possibility of built-in quality control for the fabrication of biosensors with sepd. ref. and sample areas on the same substrate.

IT 58-85-5, Biotin  
 RL: ANT (Analyte); ANST (Analytical study)  
 (new nanocomposite films for biosensors: layer-by-layer adsorbed films of polyelectrolytes, proteins or DNA)  
 RN 58-85-5 HCAPLUS  
 CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



CC 9-1 (Biochemical Methods)  
 IT **Biosensors**  
 Immobilization, biochemical  
**Polyelectrolytes**  
 (new nanocomposite films for biosensors: layer-by-layer adsorbed films of polyelectrolytes, proteins or DNA)  
 IT 58-85-5, Biotin  
 RL: ANT (Analyte); ANST (Analytical study)

(new nanocomposite films for biosensors: layer-by-layer adsorbed films of polyelectrolytes, proteins or DNA)